

PURCHASE DESCRIPTION FOR
CHAIRS, ROTARY AND STRAIGHT, WOOD OFFICE,
CLASSIC TRADITIONAL STYLE

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers wood office style chairs designed to be used with executive wood office furniture of various styles. All measurements are in SI (metric) units.

1.2 Classification.

1.2.1 Types, styles, classes and finishes. The chairs covered by this purchase description shall be of the following types, styles, classes and finishes (see 6.1). Dimensions are overall and in millimeters (mm).

Type I Executive office chairs, with gas lift swivel type (rotary), with arms, five prong base with casters

- Style 1 High back, with knee tilt chair control, Figure 1
669 mm W x 834 mm D x 1236 mm H, Arm Height 645 mm
- Style 2 Mid back, with knee tilt chair control, Figure 2
700 mm W x 835 mm D x 1168 mm H, Arm Height 649 mm
- Style 3 Low back, with tilt chair control, Figure 3
620 mm W x 718 mm D x 937 mm H, Arm Height 624 mm

Type II Office task chairs, with gas lift swivel chair controls, five prong base with casters

- Style 1 High back manager's task chair with padded arms, tilting seat and back rest, Figure 4
651 mm W x 587 mm D x 952 mm H, Arm Height 629 mm
- Style 2 Low back task chair with wood arms, tilting back rest, Figure 5
650 mm W x 642 mm D x 867 mm H
- Style 3 Low back task chair without arms, with tilting back rest, Figure 6
540 mm W x 642 mm D x 852 mm H

Type III Straight chairs

- Style 1 Closed arm, Figure 7
610 mm W x 659 mm D x 854 mm H, Seat Height 480 mm, Arm Height 656 mm, Inside Seat Width 525 mm
- Style 2 Open arm, Figure 8
610 mm W x 659 mm D x 854 mm H, Seat Height 480 mm, Arm Height 656 mm, Inside Seat Width 525 mm
- Style 3 Armless, Figure 9
540 mm W x 650 mm D x 852 mm H, Seat Height 475 mm

Type IV Conference chair, swivel tilt, with arms, five prong base with casters, Figure 10

640 mm W x 731 mm D x 944 mm H

Type V Jury chair, self centering swivel tilt, with arms and jury base, Figure 11

640 mm W x 731 mm D x 944 mm H

Each of the above chairs are available in the following classes of upholstery.

- Class 1 Leather
- Class 2 Vinyl
- Class 3 Fabric

Class 4 Customer's Own Material/Leather (COM)

Each of the above chairs are available in the following finishes.

Finish 1 Federal Walnut

Finish 2 Federal Mahogany

2. APPLICABLE DOCUMENTS

2.1 Specifications and standards. The following documents of the issues in effect on the date of invitation for bids, or request for proposal, form a part of this specification to the extent specified herein:

Federal Standards:

Fed. Test Method Std. No. 191 - Textile Test Methods.

Fed. Test Method Std. No. 311 – Leather, Method of Sampling and Testing

(Federal Specifications and Federal Test Methods are available, for bidding purposes, from General Services Administration, Business Service Centers in Boston; New York; Philadelphia; Washington, DC; Atlanta; Chicago; Kansas City, MO; Fort Worth; Houston; Denver; Los Angeles; San Francisco; and Seattle, WA.)

Handbook:

U.S. Department of Agriculture Forest Service, Forest Products Laboratory:

FPL-GTR-113 -- Wood Handbook – Wood as an Engineering Material

(Copies are available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, or may be viewed or downloaded at <http://www.fpl.fs.fed.us>.)

2.2 Commercial Standards and Publications.

American National Standards Institute Publications:

ANSI/ASQC Z1.4 - Sampling Procedures and Tables for Inspection by Attributes

ANSI/HPMA HP-1-1993 - Standard for Hardwood and Decorative Plywood

ANSI X5.1-1994 - General Purpose Office Chairs - Tests

ANSI/NFPA 260 - Cigarette Ignition Resistance of Components of Upholstered Furniture

ANSI/BIFMA X5.1-1993 General Purpose Office Chairs

(ANSI standards are available from American National Standards Institute, Inc. 1430 Broadway, New York, NY 10018.)

American Society for Testing and Materials Standards:

D 905 - Standard Method of Test for Strength Properties of Adhesives in Shear by Compression Loading.

D 1211 - Temperature Change Resistance of Clear Nitrocellulose Lacquer Films Applied to Wood.

D 1233 - Twine made from Bast and Leaf Fibers.

D 1682 - Breaking Load and Elongation of Textile Fibers.

D 2199 - Measurement of Plasticizer Migration From Vinyl Fabrics to Lacquers

D 2256 - Tensile Properties of Yarns by the Single-Strand Method

D 3597 - Woven Upholstered Fabrics - Plain, Tufted or Flocked.

D 3770 - Standard Specification for Flexible Cellular Materials - High Resilience Polyurethane Foam (HR).

D 3776 - Mass per Unit Area (Weight) of Woven Fabrics.

D 3884 – Abrasion resistance of textile fabrics (Rotary Platform, Double Head Method)
(ASTM Standards are available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

Upholstered Furniture Action Council Standard:

UFAC. - Component Test Methods - 1983

(U.F.A.C. Standards are available from U.F.A.C. Box 2436, High Point, NC 27261.)

State of California Technical Information Bulletin:

Bulletin 117-1980 - Requirements, Test Procedures and Apparatus for Testing the Flame Retardance of Resilient Filling Materials Used in Upholstered Furniture.

(State of California Technical Bulletin is available from California Department of Consumer Affairs, Bureau of Home Furnishings, 3485 Orange Grove Ave., North Highlands, CA 95660-5595.)

3. REQUIREMENTS

3.1 Materials. The following paragraphs describe minimum requirements for materials used in construction and assembly.

Regulatory requirements. The offerer/contractor is encouraged to use recovered materials in accordance with Public Law 94-580, as amended, to the maximum extent practicable.

3.1.1 Wood.

3.1.1.1 Varieties. Exposed parts shall be cherry or walnut. Only one exposed wood species shall be permitted on any one chair. Unexposed parts shall be domestic hardwood. The wood used in the construction of the unexposed components shall meet the following components at 12% moisture content. See Wood Handbook, FPL-GTR-113.

Modulus of Rupture – 68,000 kilopascals (kPa) minimum
Modulus of Elasticity – 9,500 megapascals (Mpa) minimum.

3.1.1.2 Characteristics. The solid wood used for exposed parts shall be bright, well sanded, and free from brashness, discolorations, worm holes, honeycomb, splits, and shake. The wood used for unexposed parts may contain small defects, such as pin knots, sapwood, or mineral streaks provided the strength of the part is not affected.

3.1.1.3 Plywood. All plywood shall be minimum 9 ply, minimum of 15 mm thick, and constructed in accordance with the requirements of ANSI HP-1 1994 and as specified herein. Minimum Type II bond required. Crossbanding shall be not less than grade 2.

3.1.1.4 Reserved.

3.1.1.5 Wood seasoning. All wood shall be thoroughly air-seasoned and then uniformly kiln-dried without honeycomb or case hardening to a moisture content of 5 to 7 percent. At the time of assembly, moisture content shall not exceed 7 percent. Kiln-dried parts shall be allowed to temper approximately 2 weeks in a sheltered area to equalize moisture before milling.

3.1.2 Dowels. Dowels shall be of beech, birch, hickory, or maple and have a maximum 8% moisture content at time of assembly. They shall be spirally or longitudinally grooved. Unless otherwise specified, dowels shall have a minimum diameter of 9 mm and the length shall be not less than 4 times the diameter.

3.1.3 Adhesive. Block shear strength: 19 300 kPa minimum. See test procedure paragraph 4.4.1.

3.2. Upholstery materials and flammability requirements. All upholstery cover materials, welts, interior fabrics, fillings, and padding shall meet NFPA-260 Class 1 construction, or UFAC Class 1 flammability requirements. All polyurethane foam shall meet California Technical Bulletin 117, Section A, Part I and Section D, Part II.

3.2.1 Upholstery fabric. The upholstery fabric shall be 60% Polyester and 40% Olefin, and shall be dyed, not less than 250 g/m² exclusive of back coating, complying with all the following test requirements. Flammability requirement: See par. 3.2. Known sources of supply: See par. 6.4.

- Breaking strength: 1,000 N warp/515 N filling
- Tear strength: 62.0 N warp/44.4 N filling
- Tensile strength: 1110 N warp and filling
- Seam slippage: 385 N warp/375 N filling
- Abrasion: 60 000 cycles (Heavy Duty)
- Colorfastness to light: 40 hours - Class 4
- Pilling: Class 4

The color shall conform to GSA Standard Sample colors FSS-F-15001 through FSS-F-15017 and FSS-F-16001 through FSS-F-16018 referenced in 3.7.1. (See 6.4.)

3.2.2 Leather. Leather shall be top grain, dyed full depth. Leather shall meet the following requirements when tested in accordance with the methods in 4.6.

- Thickness - 57 to 85 g
- Breaking force (grab Method) - 444 N minimum
- Elongation - 40% maximum stretch.
- Stitch tear (double hole) - 67 N minimum
- Crocking (colorfastness, resistance to rubbing) - Dry: 8.5 Munsell or better
Wet: 6.5 Munsell or better.
- Blocking - Specimens must separate with ease and show no grain damage.
- pH - 3.3 to 5.0
- Fade resistance (colorfastness) - Little or no change in color or finish.
- Abrasion resistance - No signs of the finish wearing through (except for gloss change).
- Flexibility - Fine cracks, no russet showing.

The color shall conform to GSA Standard Sample colors FSS-X-02001 through FSS-X-02009 referenced in 3.7.2. (See 6.4.)

3.2.3 Vinyl. Vinyl shall have a terry loop knit polyester base cloth. Vinyl shall meet the following requirements when tested in accordance with the methods in 4.7.

- Thickness: 1.2 mm minimum
- Total weight: Minimum 678 g/m²
- Breaking strength, Minimum: 266 N Wales, 266 N Courses
- Elongation, Maximum: 5% stretch, Wales, 25% stretch Courses
- Tear strength, Minimum: 44.4 N Wales, 44.4 N Courses
- Crocking (colorfastness, resistance to rubbing): Good
- Abrasion resistance: No signs of the finish wearing through (except for gloss changes) after 30,000 double rubs.

The color shall conform to GSA Standard Sample colors FSS-V-12001 through FSS-V-12009 referenced in 3.7.3. (See 6.4.)

3.2.4 Filler materials.

3.2.4.1 Fiberfill batting, Garneted (not resinated). Minimum 5 g/m² (Test 4.4.3), 5.5 - 16 denier. Flammability requirement: See par. 3.2.

3.2.4.2 Wadding. White fibers, 4 to 14 mm thick, 61 to 152 g/m² (Test 4.4.3).

3.2.5 Sheet fabric. Any of the following materials are acceptable over interior and exterior frame parts. Flammability requirement: See par. 3.2.

- Polyethylene, spunbonded - 39 g/m² minimum (Test 4.4.3).
- Polypropylene, spunbonded - 61.3 g/m² minimum (Test 4.4.3).
- Polypropylene, woven - 100 g/m² minimum (Test 4.4.3).

3.2.6 Polyurethane foam.

- Seat - Slab or molded, high resilience type, polyurethane foam with a minimum 38 kg/m³ polyurethane polymer density. 173 - 200 N Indentation Force Deflection (IFD) (25 percent deflection) required
- Back and Arms - Slab or molded, conventional or high resilience type polyurethane foam with a minimum 27 kg/m³ polyurethane polymer density. 120 - 147 N IFD (25 percent deflection) required.

All foam shall have a minimum recovery ratio of 70% when tested as specified in 4.4.5 and meet flame retardant requirements in 3.2. Flame retardant additives are permitted. Buff edges/corners when necessary to achieve specified final appearance and provide a smooth fitting cover.

3.2.7 Sewing and quilting twine. Minimum breaking strength 49 N. when tested as specified in 4.4.4. Shall be same color as upholstery material. Stitches per inch shall be as follows: 6 ± 1 for Vinyl, 5 ± 1 for Leather, and 7 ± 1 for fabric.

3.2.8 Welts. Minimum 4 mm core. Flammability requirement, see 3.2.

3.2.9 Sheet webbing. For seat foundation. Rubber, 22 gauge, 3 core, rayon-spun, polypropylene 100 denier. Semi finished webbing shall be run through a liquid latex bath and heat set. See 6.4.

3.2.10 Cambric. Black non-woven material, minimum 64 g/m².

3.3 Hardware.

3.3.1 Glides. Minimum 18 mm diameter. Flat beige plastic single prong glide.

3.3.2 Casters. Black, dual convex wheel, 50 mm diameter, hard carpet type, with zinc die-cast, antique brass hood.

3.3.3 Chair base. Exposed wood clad steel, 5 prong with 50 mm hub.

Base size: Type I Executive office chairs and Type IV Conference chair - 660 mm.

Type II Task chairs - 584 mm.

3.3.4 Jury (stationary) base. Steel with black finish. Base is intended for permanent installation in a jury box to support type V jury chairs. See 6.4.

3.3.5 Chair controls.

Type I Executive office chairs

Style 1 High back: Gas lift swivel type, knee tilt with tilt tension adjustment knob and two position forward tilt.

Style 2 Mid back: Gas lift swivel type, knee tilt with tilt tension adjustment knob and two position forward tilt.

Style 3 Low back without arms: Gas lift swivel tilt with lockable infinite adjustment, forward tilt and tilt tension adjustment knob.

Type II Office task chairs

Style 1 High back manager's: Gas lift swivel type, tilting seat with lockable infinite adjustment, forward seat tilt, independent infinite back rest pitch adjustment, adjustable back height.

Style 2 Low back with arms; Gas lift swivel type, forward seat tilt lockable infinite back rest pitch adjustment, adjustable back height.

Style 3 Low back without arms,: Gas lift swivel type, tilting, independent infinite back rest pitch adjustment, adjustable back height.

Type IV Conference chair, swivel tilt.

Type V Jury chair, self centering swivel tilt.

3.3.6 Back height adjusting mechanism. Ratchet type height adjustment mechanism with minimum 76 mm adjustment range. See 6.4.

3.3.7 Arm adjustment mechanism. Allows arms to adjust up and down with trigger lock and in and out from seat with a friction lock. See 6.4.

3.3.8 Adjustable lumbar support. Lever activated unit of air and foam encased in vinyl case.

3.3.9 Decorative Rosette. The decorative rosette shall be designed as shown in figure 12 and shall be finished to match the rest of the chair. Known source of supply is listed in 6.4.

3.4 Construction. All chair frames except the type II task chairs shall be constructed of solid hardwood (exposed, unexposed as applicable, see 3.1.1.1). The type II task chairs shall be plywood and/or hardwood construction with solid exposed wood trim. All chairs shall be glued, screwed and double doweled together and shall meet test requirements in 4.5. All exposed corners and edges shall be rounded to an approximate 3 mm radius. Corner blocks as wide as practicable shall be carefully fitted, and securely glued and screwed. Construction details shall be as shown in Figure 12.

3.4.1 Design. The chairs shall be classic design, with straight (leg) type, swivel type with "prong" base or jury base as specified (see 1.2.1 and 6.2). Chairs shall be similar to the specified figure. All type III straight (leg) chairs shall have glides (3.3.1) and all type I, II and IV rotary chairs shall have casters (3.3.2). All chairs shall have upholstered seats and shall be upholstered as specified below.

- Class 1 Leather
- Class 2 Vinyl
- Class 3 Fabric
- Class 4 Customer's Own Material/Leather (COM)

3.4.1.1 Component shapes.

- Front stump - solid exposed wood (3.1.1.1), 84 mm wide at the bottom, shape to 60 mm wide at the top. 38 mm radius shape on front and top of arm stump.
- Top arm - solid unexposed wood (3.1.1.1), 58 mm wide. Bandsaw to required shape.
- Cleat - solid unexposed wood (3.1.1.1), bandsaw and carve to shape. Bullet nose shape required on front and rear ends.
- Rear arm stump - solid unexposed wood (3.1.1.1), 34 x 43 mm, rhomboid shape required.

3.4.2 Tolerances. Overall width, depth, height: ± 12 mm

- Dimensions of any wood part: ± 3 mm
- Dimensions of upholstered parts: ± 12 mm
- Dimensions between arms: ± 12 mm
- Height of arms from floor (side arm chair): ± 12 mm
- Angular measurements: ± 1 degree.

3.4.3 Chair comfort. Seats shall be crowned, moderately firm and not bottom out, and have adequate ride. Backs shall be moderately firm and shall provide adequate lumbar support. Comfort will be evaluated at first article inspection by the QAS and at least one other GSA employee.

3.4.4 Upholstery requirements.

3.4.4.1 Type I executive high back and mid back chair upholstery. Seat shall consist of sheet webbing (3.2.9) with a semi-attached cushion consisting of polyurethane foam (3.2.6) with polyester fiberfill wrap (3.2.4.1) and the final upholstery cover. The high back executive chair shall have a T-cushion. The chair shall have semi attached cushions. The cushions shall be fully upholstered on the front and back. The chair back frame shall be fully upholstered on the inside and outside back of the sheet fabric. The upholstery flap shall be one piece. The back cushions shall consist of polyurethane foam with polyester fiberfill wrap. All cushions shall be welted with knife edge design. The arms shall have sheet fabric on the inside and outside, stretched taut without wrinkles. The top arm shall be covered with 13 mm polyurethane foam with a layer of 3 mm wadding covering the cleat, top and inside arm surfaces. The final covering shall have no wrinkles or pleats. Arms shall be adequately padded to provide the required appearance and thickness. The outside arm is covered with 3 mm wadding (3.2.4.2) and a final layer of covering material. The welt shall be glued in the welt line on front inside, top and outside arm. The outside back shall be welted with a 6 mm thick layer of wadding and the final upholstery cover neatly applied. The arms shall be applied with at least three stove bolts each minimum 11 mm in size. Seat and back on the executive mid and high back chairs shall have a soft wrinkled surface appearance.

3.4.4.2 Type I executive low back, type IV conference chair and type V jury base chair upholstery. Arm construction shall be identical to high back executive except the 13 mm thick polyurethane foam (3.2.6) is replaced with a piece of 6 mm thick wadding. The base for the seat shall be sheet webbing. A polyurethane foam tee shaped seat shall be glued to the frame with a layer of polyester fiberfill batting glued to the top. A 5 mm thick boarder shall be glued to the front edge of the seat cushion and cover the wood frame. The final upholstery cover shall be cut and sewn to fit. The base for the inside and outside back shall be sheet fabric. A polyurethane foam lower back with polyester fiberfill glued on the top shall be glued to the frame, and the final upholstery cover applied. The top back and the outside back shall be sewn together with a 60 mm border between them, saddle stitched on both sides to form a cushioned look. The outside back shall have a 5 mm sheet of wadding glued to the frame before inside/outside back installation. The lower portion of the outside back shall be closed with tack strip.

3.4.4.3 Type II task chair upholstery. Chair frames shall be covered with adequate thickness polyurethane foam (3.2.6) so seat and back do not "bottom out" and overall chair appearance complies with figures 4, 5 or 6 as applicable. Arms on type II, style 1 and 2 chairs shall be adequately padded and upholstered.

3.4.4.4 Type III straight chair upholstery. Seat and back foundation shall be consist of securely attached sheet webbing (3.2.7). Sheet webbing shall be covered with polyurethane foam (3.2.6) of adequate thickness to prevent seat and back from "bottoming out" and ensure the overall chair appearance complies with figures 7, 8 or 9 as applicable. Enclosed arms on style 1 chair shall be closed with sheet fabric (3.2.5), padded, and covered with upholstery material. Outside back shall be padded out to present a uniform back appearance and covered with upholstery material. Bottom of chairs shall be covered with cambric (3.2.10).

3.5 Padding, filling and upholstery requirements for all chairs. Minimum padding and filling requirements are described in construction paragraphs. Additional padding and filling shall be applied as necessary to ensure the appearance and cushion dimensions comply with figures, with no hollows, voids, flat or hard spots. All frame members, and edges of plywood seats shall be padded. Covers shall be carefully tailored and so applied that they are neat and tight, free from wrinkles and bulges. Final appearance of chair shall be symmetrical. The type and number of stitches shall be sufficient to provide the required appearance and pass all chair test requirements. Seam allowance shall be maintained and seams properly sewn so that no raw edges, runoffs, broken or skipped stitches, twists, pleats or puckers result. Top and bottom threads shall be adjusted to the upholstery materials with proper tension so there will be no looped stitches, puckering of materials, or cracking when cover is stretched to fit the chair. Welts shall lie straight and uniform. Covers for all chairs shall be attached with tacks or staples. All chair seat bottoms shall be covered with cambric.

3.6 Exposed wood finish. Finish shall match as closely as possible the overall color of GSA Standard Sample FSS-W-01001 (Federal Walnut Wood) or FSS-W-01002 (Federal Mahogany Wood) and be stained to equalize color. Semi-open pore finish with minimum two natural or synthetic top coats with adequate "build" is required. Final finish shall pass finish tests (4.4.2).

GSA Standard Samples are available from GSA-FSS-3FNEW-CO, Furniture Center, Engineering Division, Washington, DC 20406.

3.7 Upholstery material samples.

3.7.1 Fabric standard samples colors

Stripe (Emerson) fabric sample colors shall be FSS-F-15001 through FSS-F-15010.

Pattern (Shine) fabric sample colors shall be FSS-F-16001 through FSS-F-16010.

3.7.2 Leather standard sample colors shall be FSS-X-02001 Red, FSS-X-02002 Burgundy, FSS-X-02003 Blue, FSS-X-02004 Navy, FSS-X-02005 Green, FSS-X-02006 Tan, FSS-X-02007 Saddle, FSS-X-02008 Gray, FSS-X-02009 Black.

3.7.3 Vinyl standard sample colors shall be FSS-V-12001 Red, FSS-V-12002 Burgundy, FSS-V-12003 Blue, FSS-V-12004 Navy, FSS-V-12005 Green, FSS-V-12006 Tan, FSS-V-12007 Saddle, FSS-V-12008 Gray, FSS-V-12009 Black.

3.8 Identification marking. Each item shall be permanently and legibly marked with contrasting ink, on the underside of chair seat, with the specification number, national stock number, contract number, month and year of manufacture and manufacturer's name or trademark.

3.9 Workmanship. A high degree of craftsmanship shall be exercised in order to produce chairs suitable for use in executive offices. The methods of construction, assembly, filling, padding, upholstering (see 3.5), finishing and the appearance of the chairs shall be in strict accordance with the requirements of this specification. Chairs shall have a neatly tailored, taut, stuffed appearance complying with applicable figures. Loosely fitted upholstery or uneven padding is not acceptable. Stripe patterned fabric shall be aligned between adjacent components. Rotary mechanisms shall operate and rotate freely and easily without turning the base and be free from play or wobble. All adjustable mechanisms and moving parts shall operate smoothly and quietly. Casters shall rotate smoothly and be attached to prevent accidental removal. All wood surfaces not covered with upholstery materials, shall be finish sanded smooth and all corners and edges eased, thoroughly cleaned, and finished. The natural grain of the wood shall not be clouded by the finishing materials. Bleaching agents or materials shall not be used. The application of materials, drying time, sanding, cleaning, and rubbing shall be controlled to produce items with smooth, uniform exposed surfaces without blisters, pits, wrinkles, runs, tackiness or more than a trace of orange peel.

4. QUALITY ASSURANCE PROVISIONS

4.1 First article inspection and testing. The first article samples shall be inspected and tested as specified herein for all the requirements of this specification. The samples shall be manufactured in the same manner, using the same materials, equipment, processes, and procedures as used in regular production. All parts and materials, including packaging and packing, shall be obtained from the same source of supply as used in regular production. In addition, first article samples shall be compared to and shall match bid samples for style/design, workmanship, comfort, and finish (except color). Bid sample rejection points (if any) shall be corrected in the first article sample. Manufacturer shall maintain bid samples and first article samples as manufacturing standard samples until the last order is shipped, received and accepted by the ordering activity.

4.2. Production item inspection and testing. During production, items shall be inspected by the contractor in accordance with 4.3. No item shall be shipped unless it fully conforms with all contract requirements. Production items shall also comply with the manufacturing standard samples (4.1).

4.3 Inspection provisions.

4.3.1 Responsibility for inspection. Unless otherwise specified, the contractor is responsible for the performance of all inspection requirements and may use any commercial facilities (including the contractor's own facilities) suitable for the performance of the inspection requirements, unless disapproved by the Government. The Government reserves the right to perform any inspections deemed necessary to assure the item conforms to the specified requirements.

4.3.2 Visual and dimensional examination. Perform examination on a percent defective basis in accordance with ANSI/ASQC Z1.4 and the following sampling plan.

Inspection Level - II. Acceptable Quality Level (AQL) - 4.0

Inspect items for visual and dimensional requirements of this specification paying close attention to filling and upholstery (3.5) and workmanship (3.9).

4.3.2.1 Overall examination. In addition to visual and dimensional examination, inspect each chair at a viewing distance of 2 m for the following defects. Reject the item if one or more of the following defects is found.

Wood finish streaked or not uniform.

Piece visually off level.

Scratch or bruise marks on wood.

Poor fit of upholstery as evidenced by wrinkles, bulges, uneven padding, or other defects.

Welts not straight.

Chair upholstery and filling not symmetrical.

4.3.3 Packaging, packing, marking examination. Examine items for compliance with requirements stated in this document and the contract. Score areas of noncompliance with requirements as defects.

Inspection Level - S-4. Acceptable Quality Level (AQL) - 4.0.

4.4 Testing. Failure to comply with the following test requirements will be cause for rejection. Testing is required for first article inspection. See production item testing requirements in 4.2.

4.4.1 Test for adhesives.

<u>Component</u>	<u>Characteristic</u>	<u>Requirement reference</u>	<u>Test Method</u>
<u>Adhesive</u>	<u>Block shear test</u>	<u>3.1.3</u>	<u>ASTM D 905</u>

Run test if all three of the following criteria are met: the average shear strength of all samples is below 19 300 kPa; there is a 10 percent or greater difference between high and low specimen values, and at least one test specimen broke at more than 19 300 kPa.

Disregard a test specimen in computing the average if it breaks at less than 19 300 kPa; and it has 50 percent or more wood failure.

4.4.2 Finish tests and requirements. The following tests shall be performed on a sample panel finished in the same manner as units are finished in production. Perform all finish tests at first article inspection. All test panels shall be produced from finish materials currently being used in production. All samples tested shall meet the following test requirements.

- Cold check. Age panel one week. Follow ASTM D 1211 test procedure. After exposure of 10 cycles, there shall be no checking or cracking. True film checking is one or more wavy or straight lines which cross the grain and do not appear related to grain structure. When a panel displays veneer checks, check running parallel to the grain, or glue line fracture, the panel shall be disregarded and another panel tested.
- Cold print. Age panel 48 hours. A 50 x 50 mm (approx.) piece of duck material (canvas) 280 g/m², minimum count of 23.6 x 22.8 yarns per cm, shall be placed on the panel. Place a 455 g weight on the material for 24 hours

at 24 degrees C. Bottom (contact surface) of the weight shall be flat and have a 28 mm diameter. After the weight is removed, light polishing with a soft cloth and liquid polish must remove any imprint.

- Ultra violet light resistance. One solid wood panel in each finish color, finished in the same way as in production, shall be tested. Allow panels to age for a minimum of ten days at 25° C (\pm 3° C) and 35 to 75% R.H. Perform exposure test at the same ambient conditions. Mask off one half of panel with aluminum foil or cut off a control portion of sample to be used later for comparison with the exposed portion. Place test panel 150 mm from ultraviolet lights (two 48 inch, UV 351 fluorescent lamps) for 72 hours. After exposure, remove and compare exposed and unexposed sections for discoloration, fading, loss of gloss, film embrittlement, cracking or any other failures. There shall be no more than a very slight change between the tested panel and the control panel after testing.
UVA-351 fluorescent lamps are available from Q-Panel Co., Cleveland, OH.
- Toughness and adhesion. Perform test for toughness and adhesion on a sample panel finished in the same manner as the furniture using Organic Coating Adhesion Tester, Model No, 1001 in accordance with manufacturer's instructions. Mar the panel both parallel and perpendicular to the grain. Film must conform to resulting indentation. Whitening (film separation) or cracking is not acceptable.
Organic Coating Adhesion Tester Model No. 1001 is available from U.S. Testing Company, Inc. Instrument Marking Division, 1415 Park Avenue, Hoboken, NJ 07030.
- Plasticizer migration. Perform test on a sample panel finished in the same way as production pieces according to ASTM D 2199 - 82, Standard Method for Measurement of Plasticizer Migration From Vinyl Fabrics to Lacquers.

4.4.3 Test method for determining weight of material per square area. 5041 of Fed. Test Method Std. 191 or ASTM D-3776.

4.4.4 Test method for determining breaking strength of twine. 4100 of Fed. Test Method Std. 191 or ASTM D-1233, or D-2256

4.4.5 Test method for determining recovery ratio of polyurethane foam. ASTM D-3770. Recovery ratio. Use this test method for both conventional and high resilience type foam

4.4.6 Tests for chairs. Test at least one chair of each type and style listed below in accordance with ANSI/BIFMA X5.1-1993 General Purpose Office Chairs - Tests at time of First Article Inspection.

Test Schedule

Section	Type I Style 1	Type I Style 3	Type II Style 1	Type II Style 2	Type II Style 3	Type III Style 2	Type III Style 3	Type IV	Type V
5	X	X						X	X
6			X	X	X				
7						X	X		
8	X		X						
9	X	X	X	X	X	X	X	X	X
10	X		X					X	
11	X	X	X	X	X			X	X
12	X	X	X	X	X	X	X	X	X
13	X	X	X	X	X	X	X	X	
14	X		X			X			
15	X		X			X			
16	X	X						X	X
17			X	X	X				
18	X		X						
19						X	X		
20						X	X		

4.4.7. Leather test methods. Sampling procedures and location from which the sample unit is to be obtained shall be in accordance with FED-STD 311. All tests are to be performed on individual sample units, with the exception of pH

which is to be run on a composite. All test reports shall contain individual values utilized in expressing the final result. The lot shall be rejected if any one of the following conditions exists:

- More than 25% of thickness measurements taken do not fall within the required range.
- More than three test failures occur for breaking force, elongation, or stitch tear.
- More than one test failure occurs for the remaining requirements applicable to the sample unit.
- Any composite fails to meet the specific requirement.

Test	Method
Thickness	Fed Std. 311, 1011.1
Breaking force (grab method)	Fed Std. 311, 2031
Elongation	Fed Std. 311, 2031 at 100 lb load
Stitch tear (double hole)	Fed Std. 311, 2151
Crocking (colorfastness, resistance to rubbing) Test all colors	Fed Std. 311, 3031.1
Blocking	Fed Std. 311, 3121.1
PH	Fed Std. 311, 6621.1
Fade resistance (colorfastness) Test all colors	Fed Std. 191, 5660.2 72 Hour exposure
Abrasion resistance	ASTM D 3884 1000 cycles using CS-10 wheels and 1000 gram
Flexibility	ASTM D 2097 60,000 cycles

4.4.8 Vinyl test methods.

Test	Method
Total Weight	5041
Breaking Strength	5100
Elongation	5100
Tear Strength	5136
Crocking	5651
Abrasion Resistance	ASTM D 3884

5. PACKAGING, PACKING, MARKING

Package, pack and mark shipping containers in accordance with the contract or order.

6. NOTES

6.1 Intended use. Traditional classic chairs are designed for use in executive offices, courtrooms, libraries, and conference rooms of Federal agencies. The chairs should compliment the decor of executive areas when used with other furniture items within this group.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

- (a) Title, number, and date of this purchase description.
- (b) Type and style (see 1.2.1).
- (c) Upholstery material and color required (see 3.2.1, 3.2.2, 3.2.3).

6.3 SI - English unit equivalents.

$1 \text{ m}^2 \text{ (square meter)} = 1.19617 \text{ yard}^2$
 $1 \text{ kg/m}^3 \text{ (kilogram/cubic meter)} = 0.06242 \text{ lb. (mass)/ft}^3$
 $1 \text{ mm (millimeter)} = 0.03937 \text{ inch (thickness of one dime)}$
 $1 \text{ m (meter)} = 1000 \text{ mm} = 1.0936 \text{ yard (39.37 in)}$
 $1 \text{ N (Newton)} = 0.225 \text{ lb. (force)}$
 $1 \text{ kg (kilogram)} = 2.2 \text{ lb. (mass)}$
 $1 \text{ g (gram)} = 0.0022 \text{ lb. (mass)}$
 $1 \text{ g (gram)} = 0.03527 \text{ oz. (mass avoirdupois)}$
 $1 \text{ kPa (kilo Pascal)} = 0.14514 \text{ lb. (force)/in}^2 \text{ (PSI)}$
 $(C^\circ \times 9/5) + 32 \text{ (Celsius)} = F^\circ \text{ (Fahrenheit)}$
 $1 \text{ g/m}^2 \text{ (gram per square meter)} = 0.02949 \text{ oz/yd}^2 \text{ or } 0.04426 \text{ oz/linear yard (54" W basis)}$

To convert SI units to English units, multiply SI measurement by the appropriate English conversion factor listed above. See example below:

$$900 \text{ mm} \times 0.03937 \text{ in./mm} = 35.43 \text{ inches}$$

To convert Celsius temperature to Fahrenheit temperature use the above conversion equation. See example below:

$$(20^\circ\text{C} \times 1.8) + 32 = 68^\circ\text{F}$$

6.4 Known sources of supply.

Upholstery fabric: Wyoming Weavers

Leather: Conneaut Leather

Vinyl: Morbern USA

Decorative Rosette: Vest Wood model number 700 Rosette

Sheet webbing: Ultra Flex or equal.

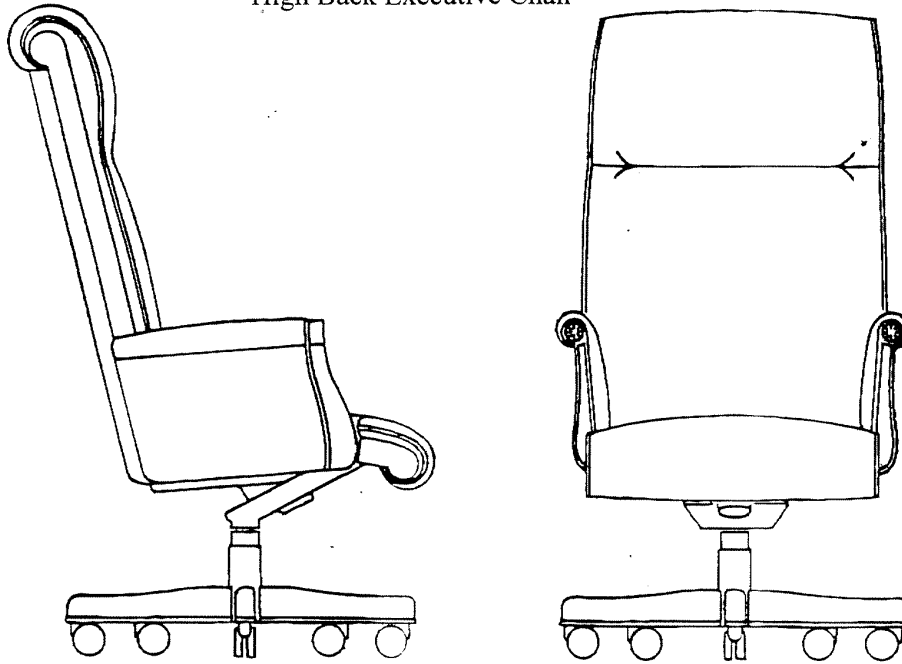
3.3.4 Jury (stationary) base. Collier-Keyworth, model no. 515 or equal.

3.3.6 Back height adjusting mechanism. International Mechanical Instruments, Model no. 4821 or equal.

3.3.7 Arm adjustment mechanism. International Mechanical Instruments, Model no. A031-96 or equal.

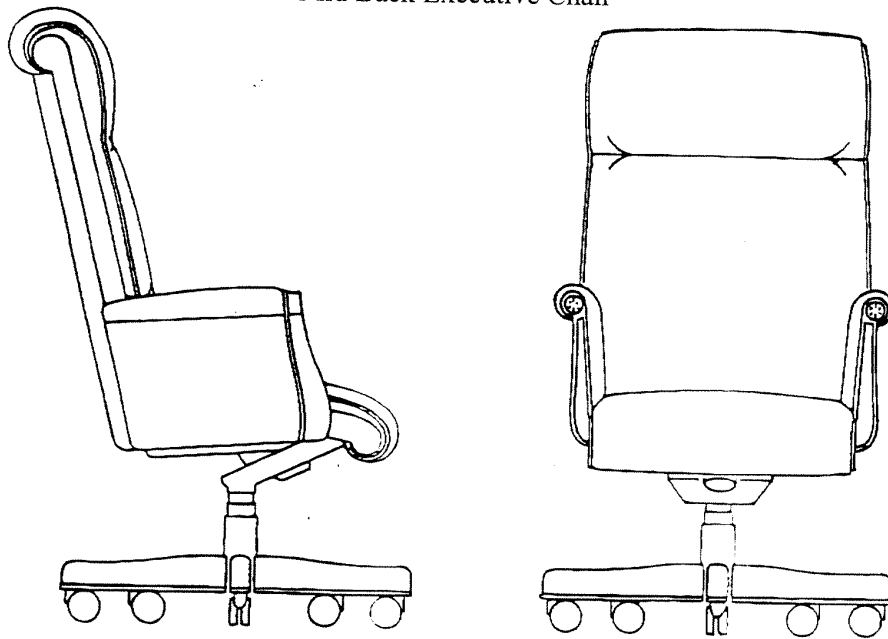
Drawings of each type of chair (Figures 1-19) are incorporated by reference into this purchase description and are available from the contract specialist.

Figure 1 - Type I, Style 1
High Back Executive Chair



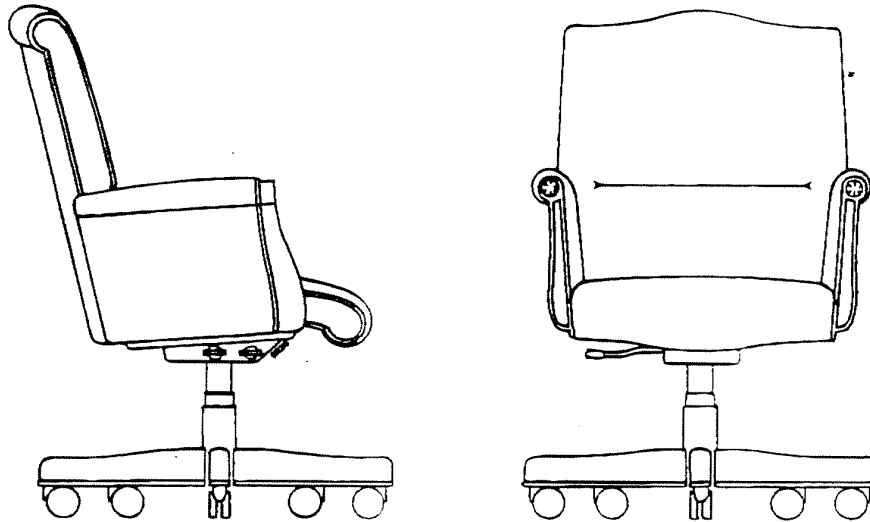
Overall Width	Overall Depth	Overall Height	Arm Height
669 mm	835 mm	1236 mm	645 mm

Figure 2 - Type I, Style 2
Mid Back Executive Chair



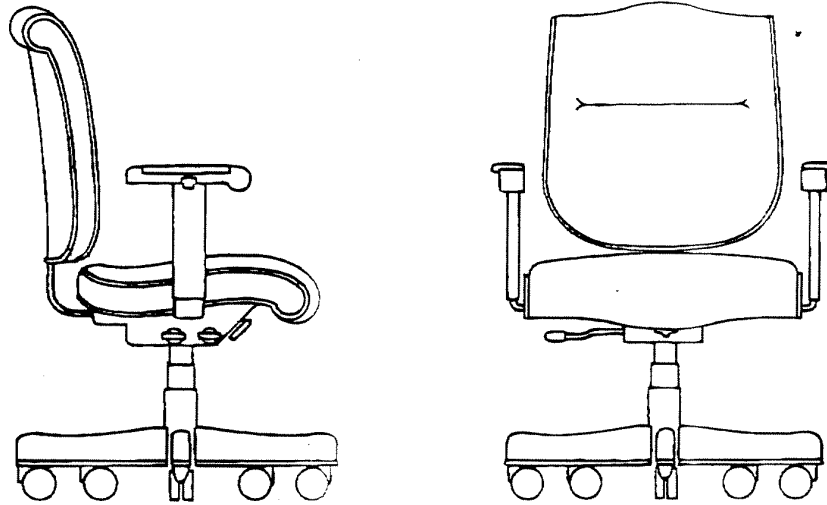
Overall Width	Overall Depth	Overall Height	Arm Height
700 mm	835 mm	1168 mm	649 mm

Figure 3 - Type I, Style 3
Low Back Executive Chair



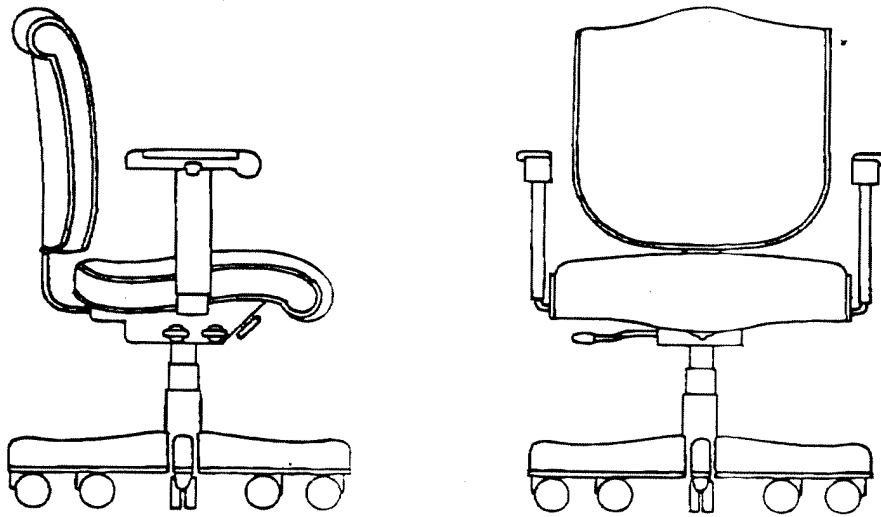
Overall Width	Overall Depth	Overall Height	Arm Height
620 mm	718 mm	937 mm	624 mm

Figure 4 - Type II, Style 1
High Back Managers Task Chair



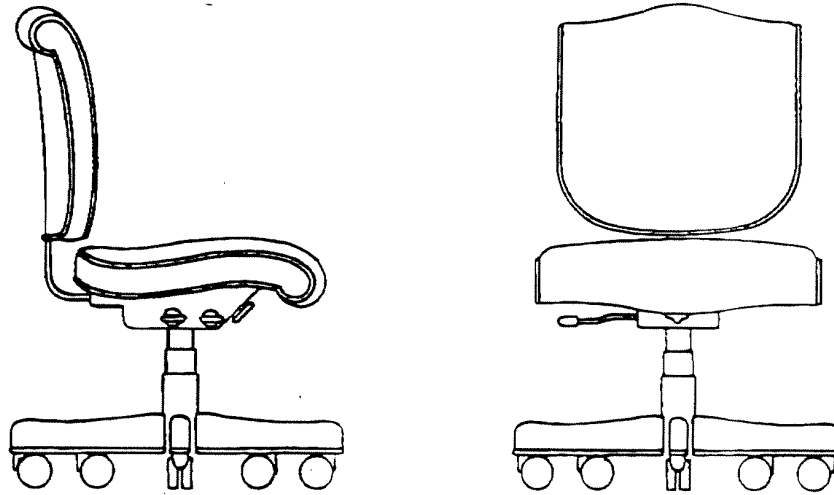
Overall Width	Overall Depth	Overall Height	Arm Height
651 mm	587 mm	952 mm	629 mm

Figure 5 - Type II, Style 2
Low Back Task Chair With Arms



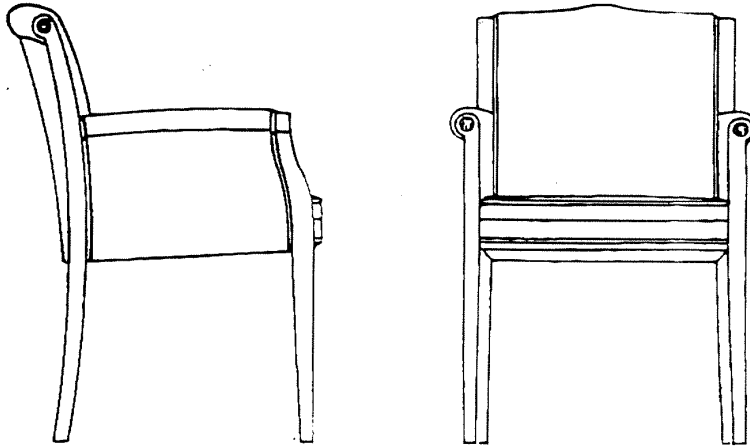
Overall Width	Overall Depth	Overall Height
650 mm	642 mm	867 mm

Figure 6 - Type II, Style 3
Low Back Task Chair Without Arms



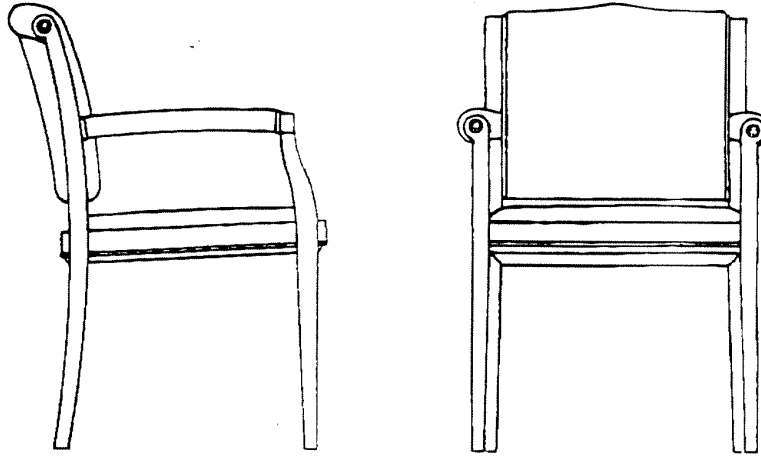
Overall Width	Overall Depth	Overall Height
540 mm	642 mm	852 mm

Figure 7 - Type III, Style 1
Closed Arm Straight Chair



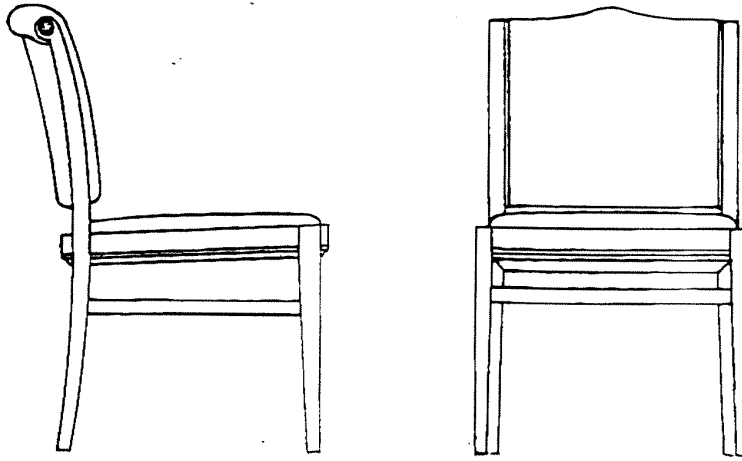
Overall Width	Overall Depth	Overall Height	Arm Height	Seat Height	Inside Seat Width
610 mm	659 mm	854 mm	656 mm	480 mm	525 mm

Figure 8 - Type III, Style 2
Open Arm Straight Chair



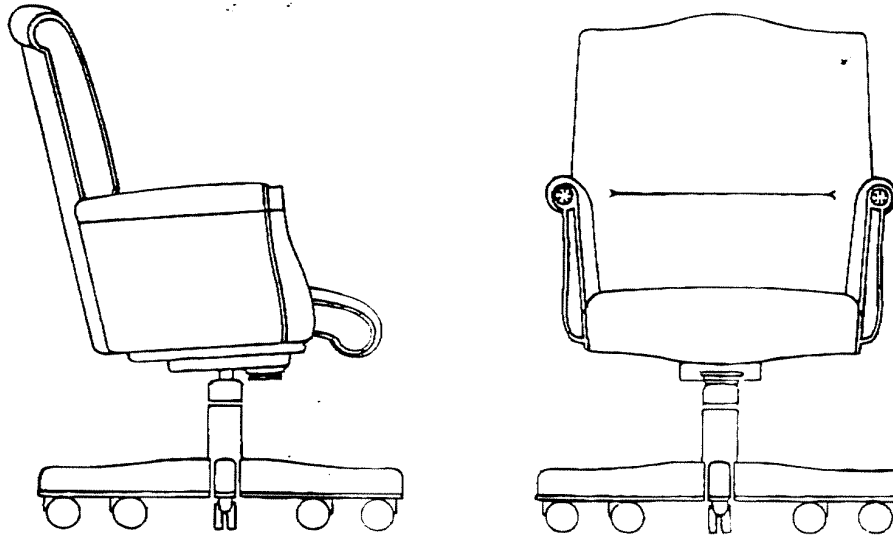
Overall Width	Overall Depth	Overall Height	Arm Height	Seat Height	Inside Seat Width
610 mm	659 mm	854 mm	656 mm	480 mm	525 mm

Figure 9 - Type III, Style 3
Armless Straight Chair



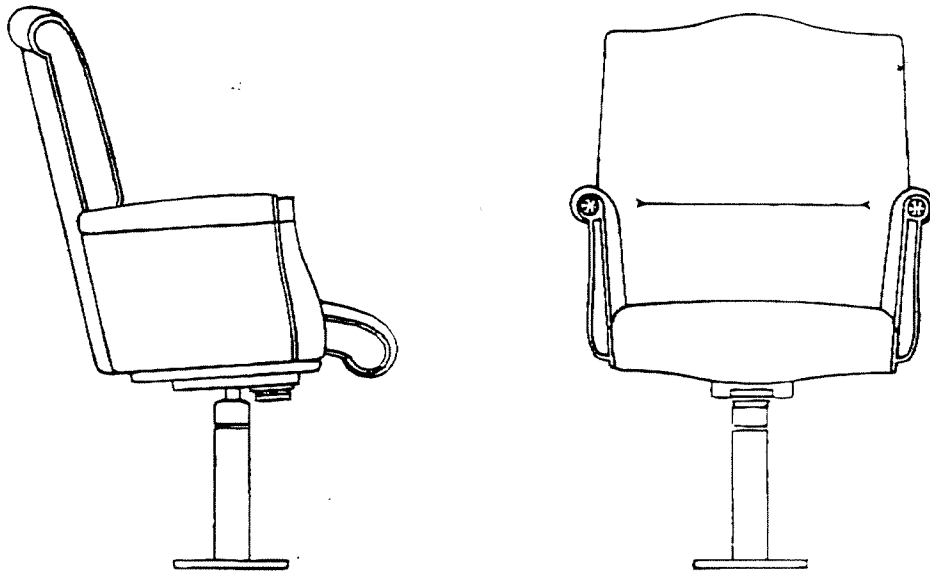
Overall Width	Overall Depth	Overall Height	Seat Height
540 mm	650 mm	852 mm	475 mm

Figure 10 - Type IV
Conference Chair



Overall Width	Overall Depth	Overall Height
640 mm	731 mm	944 mm

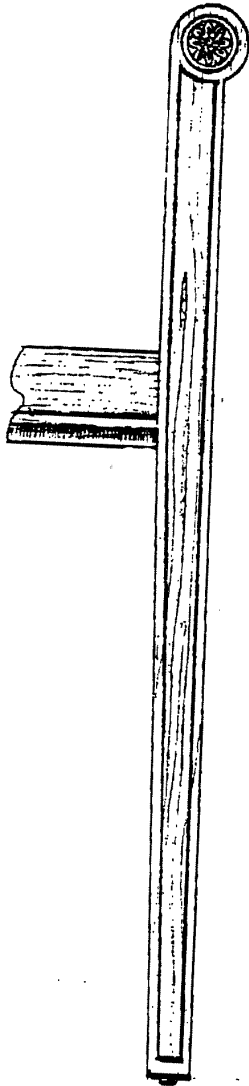
Figure 11 - Type V
Jury Chair



Overall Width	Overall Depth	Overall Height
640 mm	731 mm	944 mm

Figure 12
Chair Construction Details

SIDE CHAIR



SWIVEL TILT CHAIR

